



Dr. Vladimir V. Tsukruk

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Founding Co-Director, GT-Air Force Center of Excellence BIONIC
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CURRENT DUTIES

Vladimir V. Tsukruk is an expert in the cross-disciplinary field of materials science and nanotechnology with an emphasis on surface and interfacial phenomena, responsive polymers, biopolymer and bioinspired nanomaterials, hybrid, hard-soft nanomaterials and their multilength-scale characterization with advanced scanning probe microscopy approaches. He is a tenured Professor at School of Materials Science and Engineering (since 2006), a founding Director of Microanalysis Center (since 2008) and a founding co-Director of GT Air Force Center of Excellence on BIONIC (2009-2014). He supervises a research group of about 20 graduate students, postdoctoral researchers, and visitors supported by current projects funded by National Science Foundation, Air Force Office of Scientific Research, Department of Energy, and private industries. His research is disseminated about 400 peer-reviewed papers including *Nature*, *Science*, *NanoLett*, *PRL*, *JACS*, *Adv. Mater.* and others cited *about 14,000 times and H-index of 57*. As part of his professional services, he organized ten professional conferences and workshops at MRS and ACS National meetings; led national programs at Polymer Materials Science and Engineering Division, American Chemical Society as a Co-Chair of Program Committee. He has been elected as a *Fellow* (highest professional distinction, reserved for about 1% of members) for all three major professional societies in his field: *American Physical Society* (2009), *Materials Research Society* (2011), and *American Chemical Society* (2014). He served/s on *Editorial Advisory Boards of eight professional journals* with current membership at *Langmuir*, *Polymer*, *ACS Applied Materials & Interfaces*, *ACS Biomaterials Science & Engineering*, *Advances in Materials Science & Engineering*. Recently, he became an Associate Editor of high-impact journal, *ACS Applied Materials and Interfaces*.

EDUCATION and TRAINING

MSE Department, MIT	Polymer Materials Science, sabbatical	2005
Polymer Science Department, Akron U.	Polymer Materials Science post-doctoral	1992-1993
Technical University of Darmstadt	Polymer Engineering, post-doctoral	1990-1992
Institute of Macromolecular Chemistry,	Chemistry/Polymer Science	D.Sc. 1988
Institute of Macromolecular Chemistry	Chemistry/Polymers	Ph.D. 1983
National Academy of Sciences of Ukraine		
National University of Ukraine, Kiev	Molecular Physics	M.S., 1978

EMPLOYMENT

2006–present	Georgia Institute of Technology, Atlanta, GA
	Professor, School of Materials Science & Engineering
	Professor, School of Polymers, Textile, and Fibers (2006-2010)
	Founding Director, GT Microanalysis Center (MAC)
	Founding Co-Director, Air Force Center of Excellence on Bio-enabled Inorganic-Organic Nanostructures and Improved Cognition (BIONIC)
	Faculty Member, GT Bioengineering Program

Faculty Member, Institute for Biosciences and Biotechnologies
 Faculty Member, Center for Organic Photonics and Electronics
 Faculty Member, GT Polymer Network

- 1999–2006 **Iowa State University, Ames, IA**
 Professor, Department of Materials Science & Engineering
 Chair, Undergraduate Polymer Specialization
 Director of Graduate Education
- 1993–1999 **Western Michigan University, Kalamazoo, MI**
 Chair of Department, Department of Construction, Materials, and Design
 Professor, Materials Science & Engineering
 Associate Professor, Materials Science & Engineering
- 1992–1993 **The University of Akron, Akron, OH**
 Research Associate, Department of Polymer Science
- 1989–1992 **National University of Ukraine and National Academy of Sciences, Kiev**
 Head, Laboratory of Molecular Structures, Institute of Bioorganic Chemistry
 Principal Research Fellow, Institute of Bioorganic Chemistry
- 1978–1989 **Institute of Macromolecular Chemistry, National Academy of Sciences, Ukraine**
 Senior Research Fellow, Junior Research Assistant, PhD candidate
 Department of Polymer Physics

Visiting Positions

- 2013 Visiting Professor, Humboldt Research Award, working on biomaterials at MPI Golm, Germany
- 2010 Visiting Professor, Humboldt Research Award, working responsive materials at University of Bayreuth, Germany
- 2005 Visiting Professor working on interference lithographical polymers at Department of Materials Science and Engineering, MIT
- 2001 Visiting Professor working on quasicrystals at Ecole des Mines de Nancy, France
- 1996 Humboldt Research Fellow working on light emitting diodes at Marburg University, Germany
- 1995 Faculty Research Associate working on polymer nanocoatings at Air Force Research Lab
- 1995 Visiting Scientist working on nanotribology at Ford Research & Engineering Center, Dearborn
- 1994 Visiting International Scholar working on block copolymers at Nihon University, Tokyo
- 1994 NSF Visiting Scholar working on polyglutamates and Langmuir monolayers at Stanford
- 1992 Visiting Scientist working on elastomeric liquid crystals at Freiburg University, Germany
- 1990–1992 Humboldt Research Fellow working on liquid crystals at the Technical University of Darmstadt, Germany

TEACHING and STUDENT TRAINING

Recent graduate and Postdoctoral Scholars Advised

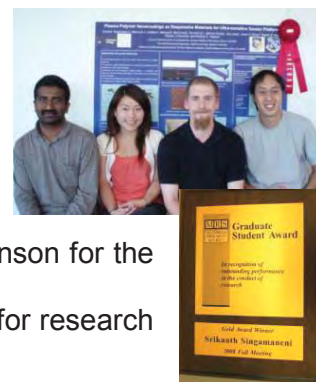
70+ graduate and post-graduate (1996–2015): 20 PhD, 33 post-docs/visitors, and 23 MS. Recent PhD graduates/post-doctorals: I. Drachuk (2014, AFRL); T. Koning (2014, U. Bayreuth), I. Choi (2013, Cornell), M. Gupta (2012, Princeton); K. Anderson (2012, Dow); S. Chang (2011, MIT); Prof. S. Singamaneni (2010, WashU, St. Louis); Prof. E. Kharlampieva (2010, U. Alabama); M. McConney (2009, AFRL); Prof. H. Ko (UNIST, 2008); Prof. C. Jiang (2007, U. South Dakota); M. Lemieux (2006, Stanford, C3Nano); S. Peleshanko (2006, DuPont); D. Julthongpiput (2003, Intel); V. Gorbunov (2001,



Bruker); Prof. I. Luzinov (2000, Clemson U.)

Recent Awards for Graduate and Postdoctoral Scholars Advised

- 2014 COPE Scholarship to K. Hu for graphene bioelectronics
- 2014 Award for Best Poster at GT Polymer Network to K. Hu research on biocomposites
- 2014 Awards to K. Hu and J. Geldmeir for Best Posters at MSE Poster Student Competition
- 2014 Award to K. Hu for Invited Talk at Michigan Macro Symposium
- 2014 National Research Council post-doctoral Fellowship to I. Drachuk to work at AFRL
- 2013 Excellence in ACS Graduate Research Symposium Award to I. Drachuk for research on cells
- 2013 Three GT MSE best poster awards to I. Drachuk, K. Hu, R. Geryak, and R. Suntivich
- 2013 IC Post-doctoral Fellowship to M. Gupta for biomimetic research at Princeton
- 2012 SAIC Best Paper Award (to I. Drachuk) for research on cell protection
- 2011 SAIC Best Paper Award (to D. Kulkarni) for research on graphene
- 2010 Georgia Tech MSE Department Research Initiation Awards (I. Choi, M. Gupta, D. Kulkarni) for first refereed publication' on hybrid nanomaterials in first 18 month of graduate study
- 2010 National Defense Science and Engineering Graduate Fellowship to Z. Combs to work on Raman active materials
- 2009 National Research Council post-doctoral Fellowship to M. McConney to continue research on responsive polymers at AFRL
- 2009 SAIC Best Paper Award to M. Gupta for research on silk nanomaterials
- 2008 **MRS Gold Award for Graduate Research** to S. Singamaneni for the best graduate research on buckling of polymer microstructures, the highest student honor at MRS
- 2007 **MRS Best Poster Award** to S. Singamaneni, M. McConney, Y.H. Lin, S. H. Chang for research on plasma polymerized bio-materials
- 2007 Central Intelligence Agency Post-doctoral Fellowship to M. Lemieux to continue his work on directed assembly at Stanford
- 2007, 2006 Iowa State Zaffarano Prizes to S. Peleshanko, M. Lemieux, K. Genson for the most refereed publications in in PhD studies
- 2006 National Research Council post-doctoral Fellowship (to K. Genson) for research on grafted polymers at NIST



Other Teaching Activities

Textbook completed in 2012: V. V. Tsukruk, S. Singamaneni, *Scanning Probe Microscopy of Soft Matter: Fundamentals and Practices*, Wiley-VCH, Weinheim, **2012**, 661 pages.

Member of about 20 completed and current POS committees in 4 different departments

Diversity training: about 40% of all graduate students/post-docs trained are females including two African-American females which is twice higher than the average in GT engineering

Five different courses developed at Georgia Tech including five first-time preparations

Materials Science and Engineering Department, Georgia Institute of Technology

Polymer Characterization	2011-current
Introduction into Polymers Science and Engineering	2009-current
Soft Nanomaterials	2009-current
Advanced Polymeric Materials	2007-current
Nanotechnology and nanomaterials	2007-current

Average teaching evaluation (“effective teacher”) is 4.2.

Prior contributions:

Director, MSE Departmental Graduate Program, 2002-2004, Chair, Polymer Specialization Program, 1999-2006; Iowa State U.; established a new curriculum in polymer materials: a logical sequence of joint polymer courses for MSE and ChE departments (ISU); redesigned undergraduate and graduate programs (WMU); Outstanding Service to Students Award, WMU (1995); 11 undergraduate and seven graduate courses have been proposed, developed, and taught:

SCHOLARLY ACHIEVEMENTS

PUBLICATIONS

390 refereed papers, 30 invited reviews, 2 books co-authored and 3 volumes co-edited. About 14,000 citations with H-index of 56 (Web of Knowledge). 5 patents.

Most significant and relevant publications

- S. S. Sheiko, J. Zhou, J. Boyce, D. Neugebauer, K. Matyjaszewski, C. Tsitsilianis, V. V. Tsukruk, J.-M. Y. Carrillo, A. V. Dobrynin, M. Rubinstein, Perfect mixing of immiscible macromolecules at fluid interfaces, *Nature Mater.*, **2013**, 12, 735-740.
- M. K. Gupta, D. D. Kulkarni, R. Geryak, S. Naik, V. V. Tsukruk, A robust and facile approach to assembling mobile and highly-open unfrustrated triangular lattices from ferromagnetic nanorods. *Nano Lett.*, **2013**, 13, 36-42.
- V. V. Tsukruk, S. Singamaneni, *Scanning Probe Microscopy of Soft Matter: Fundamentals and Practices*, Wiley-VCH, Weinheim, **2012**, 661 pages.
- Drachuk, I.; O. Shchepelina, M. Lisunova, S. Harbaugh, N. Kelley-Loughnane, M. Stone, V. V. Tsukruk, pH-Responsive Nanoshells for Direct Regulation of Cell Activity, *ACS Nano*, **2012**, 6, 4266.
- J. T. Wilson, W. Cui, V. Kozlovskaya, E. Kharlampieva, D. Pan, Z. Qu, V. R. Krishnamurthy, J. Mets, V. Kumar, J. Wen, Y. Song, V. V. Tsukruk, E. L. Chaikof, Cell Surface Engineering with Polyelectrolyte Multilayer Thin Films, *J. Am. Chem. Soc.*, **2011**, 133, 7054.
- Shchepelina, O.; Drachuk, I.; Gupta, M. K.; Lin, J.; Tsukruk, V. V. Silk-on-Silk LbL Microcapsules, *Adv. Mater.*, **2011**, 23, 4655.
- Cohen-Stuart, M. C.; Huck, W.; Genzer, J.; Müller, M.; Ober, C.; Stamm, M.; Sukhorukov, G.; Szleifer, I.; Tsukruk, V. V.; Urban, M.; Winnik, F.; Zauscher, S.; Luzinov, I.; Minko, S. Emerging Applications of Stimuli-responsive Polymer Materials. *Nature Mater.* **2010**, 9, 101.
- M. E. McConney, K. D. Anderson, L. L. Brott, R. R. Naik, V. V. Tsukruk, Bioinspired Material Approaches to Sensing, *Adv. Funct. Mater.*, **2009**, 19, 2527.
- R. W. Friddle, M. C. LeMieux, G. Cicero, A. B. Artyukhin, V. V. Tsukruk, J. C. Grossman, G. Galli, A. Noy, Single functional group interactions with individual carbon nanotubes, *Nature Nanotech.*, **2007**, 2, 692
- C. Jiang, W. Y. Lio, V. V. Tsukruk, Surface Enhanced Raman Scattering Monitoring of Chain Alignment in Freely Suspended Nanomembranes, *Phys. Rev. Lett.*, **2005**, 95, 115503.
- V. V. Tsukruk, H. Ko, S. Peleshanko, Nanotube surface arrays: Weaving, bending, and assembling on patterned silicon, *Phys. Rev. Lett.* **2004**, 92, 065502.
- M. Ornatska, S. Peleshanko, K. L. Genson, B. Rybak, K. N. Bergman, V. V. Tsukruk, Assembling amphiphilic highly branched molecules in supramolecular nanofibers, *J. Am. Chem. Soc.*, **2004**, 126, 9675
- C. Jiang, S. Markutsya, Y. Pikus, V. V. Tsukruk, Freely Suspended Nanocomposite Membranes as Highly-Sensitive Sensors, *Nature Mater.* **2004**, 3, 721.

Recent refereed papers (1995-2015)

2015

1. C. Ye, V. V. Tsukruk, Designing two-dimensional materials that spring rapidly into three-dimensional shapes, *Science*, **2015**, 347, 130-131.
2. M. Erko, O. Younus-Metzler, A. Rack, P. Zaslansky, S. L. Young, G. Milliron, M. Chyashnavichyus, F. G. Barth, P. Fratzl, V. Tsukruk, I. Zlotnikov, Y. Politi, Micro- and nanostructural details of the spider's mechanical vibration filter. Relevance for low frequency signal transmission, *Interface*, **2015**,
3. Drachuk, R. Calabrese, S. Harbaugh, N. Kelley-Loughnane, D. L. Kaplan, M. Stone, V. V. Tsukruk, Silk Macromolecules With Amino Acid-Peg Grafts For Controlling LbL Encapsulation And Aggregation Of Recombinant Bacterial Cells, *ACS Nano*, 8/30/2014

2014

1. K. Hu, D. D. Kulkarni, I. Choi, V. V. Tsukruk, Graphene–Polymer Nanocomposites for Structural and Functional Applications, *Prog. Polym. Sci.*, **2014**, 39, 1934-1972.
2. R. D. Geryak, V. V. Tsukruk, Reconfigurable and Actuating Structures from Soft Materials, *Soft Matter*, **2014**, 10, 1246-1263.
3. M. Chyashnavichyus, S. L. Young, V. V. Tsukruk, Probing of polymer surfaces in the viscoelastic regime, *Langmuir*, **2014**, 30, 10566-10582.
4. H. Ren, D. D. Kulkarni, R. Kodiyath, W. Xu, I. Choi, V. V. Tsukruk, Competitive Adsorption of Dopamine and Rhodamine 6G on the Surface of Graphene Oxide, *ACS Appl. Mater. & Interfaces*, **2014**, 6, 2459-2470.
5. T. König, R. Kodiyath, Z. A. Combs, M. A. Mahmoud, M. A. El-Sayed, V. V. Tsukruk, Silver nanocube aggregates in cylindrical pores for higher refractive index plasmonic sensing, *Particle*, **2014**, 31, 274-283.
6. S. T. Malak, T. König, R. Near, Z. A. Combs, M. A. El-Sayed, V. V. Tsukruk, Stacked gold nanorectangles with higher order plasmonic modes and top-down plasmonic coupling, *J. Phys. Chem., C*, **2014**, 118, 5453-5462.
7. C. Ye, D. D. Kulkarni, H. Dai, V. V. Tsukruk, Programmable Arrays of “Micro-bubble” Constructs via Self-Encapsulation, *Adv. Funct. Mater.*, **2014**, 24, 4364-4373.
8. W. Xu, I. Choi, F. A. Plamper, C. V. Synatschke, A. H. E. Müller, Y. B. Melnichenko, V. V. Tsukruk, Thermo-Induced Limited Aggregation of Responsive Star Polyelectrolytes, *Macromolecules*, **2014**, 47, 2112-2121.
9. R. Suntivich, I. Drachuk, R. Calabrese, D. L. Kaplan, V. V. Tsukruk, Inkjet printing of silk nest arrays for cell hosting, *Biomacromolecules*, **2014**, 15, 1428-1435.
10. D. D. Kulkarni, S. Kim, M. Chyashnavichyus, K. Hu, A. G. Fedorov, V. V. Tsukruk, Chemical Reduction of Individual Graphene Oxide Sheets as Revealed by Electrostatic Force Microscopy, *J. Am. Chem. Soc.*, **2014**, 136, 6546-6549.
11. V. V. Shevchenko, A. V. Stryutsky, N. S. Klymenko, M. A. Gumenna, A. A. Fomenko, V. N. Bliznyuk, V. V. Trachevsky, V. V. Davydenko, A. V. Dorokhin, V. V. Tsukruk, Protic and aprotic anionic oligomeric ionic liquids, *Polymer*, **2014**, 55, 3349-3359.
12. T. König, P. A. Ledin, J. Kerszulis, M. A. Mahmoud, M. A. El-Sayed, J. R. Reynolds, V. V. Tsukruk, Electrically tunable plasmonic behavior of nanocube-polymer nanomaterials induced by a redox active electrochromic polymer, *ACS Nano*, **2014**, 8, 6182-6192.
13. C. Ye, Z. A. Combs, R. Calabrese, H. Dai, D. L. Kaplan, V. V. Tsukruk, Robust Microcapsules with Controlled Permeability from Silk Fibroin Reinforced with Graphene oxide, *Small*, **2014**, 10, 5087-5097.
14. P. A. Ledin, I. Tkachenko, W. Xu, I. Choi, V. Shevchenko, V. V. Tsukruk, Star-Shaped Molecules with POSS Core and Azobenzene Dye Arms, *Langmuir*, **2014**, 30, 8856-8865.
15. S. Kim, D. Kulkarni, R. Davis, S. Kim, A. Voevodin, S. Jang, V. V. Tsukruk, A. G. Fedorov, Controlling Physicochemical State of Carbon on Graphene Using Focused Electron Beam Induced Deposition, *ACS Nano*, **2014**, 8, 6805-6813.
16. S. L. Young, M. Chyashnavichyus, M. Erko, F. G. Barth, P. Fratzl, I. Zlotnikov, Y. Politi, V. V. Tsukruk, A spider's biological vibration filter: micromechanical characteristics of a biomaterial surface, *Acta Biomater.*, **2014**, 10, 4832-4842.
17. J. Geldmeier, T. König, M. A. Mahmoud, M. A. El-Sayed, V. V. Tsukruk, Tailoring the Plasmonic Modes of a Grating-Nanocube Assembly to Achieve Broadband Absorption in the Visible Spectrum, *Adv. Funct. Mater.*, **2014**, 24, 6797-6805.
18. A. G. Fedorov, S. Kim, M. Henry, D. Kulkarni, V. V. Tsukruk, Focused Electron Beam Induced Processing (FEBIP) for Emerging Applications in Carbon Nanoelectronics, *Appl. Physics, A*, **2014**, 117, 1659-1674.
19. M. B. Müller, C. Kuttner, T. A. F. König, V. V. Tsukruk, S. Förster, M. Karg, A. Fery, A Plasmonic Library Based on Substrate-Supported Gradiant Plasmonic Arrays, *ACS Nano*, **2014**, 9, 9410-9421.

20. M. Chyasnavichyus, S. L. Young, V. V. Tsukruk, Mapping micromechanical properties of soft polymer contact lenses, *Polymer*, **2014**, 55, 6091-6101.
21. W. Xu, P. A. Ledin, F. A. Plamper, C. V. Synatschke, A. H. E. Muller, V. V. Tsukruk Multi-Responsive Microcapsules Based on Multilayer Assembly of Star Polyelectrolytes, *Macromolecules*, **2014**, 47, 7858-7868.
22. C. Hanske, M. Tebbe, C. Kuttner, V. Bieber, V. V. Tsukruk, M. Chanana, T. A. F. König, A. Fery, Strongly Coupled Plasmonic Modes on Macroscopic Areas via Template-Assisted Colloidal Self-Assembly, *Nano Lett.*, **2014**, 14, 6863-6871.

2013

1. S. S. Sheiko, J. Zhou, J. Boyce, D. Neugebauer, K. Matyjaszewski, C. Tsitsilianis, V. V. Tsukruk, J.-M. Y. Carrillo, A. V. Dobrynin, M. Rubinstein, Perfect mixing of immiscible macromolecules at fluid interfaces, *Nature Mater.*, **2013**, 12, 735-740.
2. I. Drachuk, M. K. Gupta, V. V. Tsukruk, Biomimetic coatings to control cellular function through cell surface engineering, *Adv. Funct. Mater.*, **2013**, 23, 4437-4453.
3. M. C. Vasudev, K. D. Anderson, V. V. Tsukruk, T. J. Bunning, R. R. Naik, Exploration of Plasma-Enhanced Chemical Vapor Deposition as a Method for Thin Film Fabrication with Biological Applications, *ACS Appl. Mater. Interfaces*, **2013**, 5, 3983-3994.
4. M. K. Gupta, D. D. Kulkarni, R. Geryak, S. Naik, V. V. Tsukruk, A robust and facile approach to assembling mobile and highly-open unfrustrated triangular lattices from ferromagnetic nanorods. *Nano Lett.*, **2013**, 13, 36-42.
5. W. Xu, I. Choi, F. A. Plamper, C. V. Synatschke, A. H. E. Muller, V. V. Tsukruk, Non-destructive light-initiated tuning of LbL microcapsule permeability, *ACS Nano*, **2013**, 7, 598-613.
6. M. K. Gupta, T. König, R. Near, D. Nepal, L. F. Drummy, S. Biswas, S. Naik, R. A. Vaia, M. A. El-Sayed, V. V. Tsukruk, Surface Assembly and Plasmonic Properties in Strongly Coupled Segmented Gold Nanorods, *Small*, **2013**, 9, 2979-2990.
7. R. Kodiyath, S. Malak, Z. Combs, T. Koenig, M. A. Mahmoud, M. A. El-Sayed, V. V. Tsukruk, Assemblies of Silver Nanocubes with Highly Sensitive SERS Chemical Vapor Detection, *J. Mater. Chem. A*, **2013**, 1, 2677-2928.
8. R. Kodiyath, I. Choi, B. Patterson, C. Tsitsilianis, V. V. Tsukruk, Interfacial Assembly of pH Responsive Ampholytic Heteroarm Star Block Terpolymers, *Polymer*, **2013**, 54, 1150-1159.
9. K. Hu, M. K. Gupta, D. D. Kulkarni, V. V. Tsukruk, Ultra-Robust Graphene Oxide-Silk Fibroin Nanocomposite Membranes, *Adv. Mater.*, **2013**, 25, 2301-2307.
10. I. Choi, S. T. Malak, W. Xu, W. T. Heller, C. Tsitsilianis, V. V. Tsukruk, Multicompartmental microcapsules from star copolymer micelles, *Macromolecules*, **2013**, 46, 1425-1436.
11. M. Lisunova, A. Dorokhin, N. Holland, V. V. Shevchenko, V. V. Tsukruk, Assembly of the anisotropic microcapsules in aqueous dispersions, *Soft Matter*, **2013**, 9, 3651-3660.
12. Drachuk, I., O. Shchepelina, S. Harbaugh, N. Kelley-Loughnane, M. Stone, V. V. Tsukruk, Cell Surface Engineering with Edible Protein Nanoshells, *Small*, **2013**, 9, 3128-3137.
13. T. König, V. V. Tsukruk, S. Santer, Controlled Topography Change of Sub-diffraction structures based on photosensitive polymer films induced by surface plasmon polaritons, *ACS Appl. Mater. Interfaces*, **2013**, 5, 6009-6016.
14. Z. A. Combs, S. T. Malak, T. König, M. A. Mahmoud, J. L. Chávez, M. A. El-Sayed, N. Kelley-Loughnane, V. V. Tsukruk, Aptamer-Assisted Assembly of Gold Nanoframe Dimers, *Particle*, **2013**, 30, 1071-1078.
15. I. Choi, D. D. Kulkarni, W. Xu, C. Tsitsilianis, V. V. Tsukruk, Star Polymer Unimicelles on Graphene Oxide Flakes, *Langmuir*, **2013**, 29, 9761-9769.
16. V. V. Shevchenko, A. V. Sidorenko, V. N. Bliznyuk, I. M. Tkachenko, V. Shekera, V., N. N. Smirnov, N. N., I. A. Maslyanitsyn, V. D. Shigorin, A. V. Yakimansky, V. V. Tsukruk, Synthesis and properties of hydroxylated core-fluorinated diamines and polyurethanes based on them with azobenzene nonlinear optical chromophores in the backbone, *Polymer*, **2013**, 54, 6516-6525.
17. K. Hu, L. S. Tolentino, D. D. Kulkarni, C. Ye, S. Kumar, V. V. Tsukruk, Written-in Conductive Patterns on Robust Graphene Oxide Biopaper by Electrochemical Microstamping, *Angew. Chem.*, **2013**, 52, 13784-13788.

2012

- V. V. Tsukruk, S. Singamaneni, *Scanning Probe Microscopy of Soft Matter: Fundamentals and Practices*, Wiley-VCH, Weinheim, **2012**, 661 pages.

- Peleshanko, S.; Tsukruk, V. V. Assembling Hyperbranched Polymers, *J. Polym. Sci.: Polymer Phys.*, **2012**, *50*, 83-100.
- K. D. Anderson, S. L. Young, H. Jiang, R. Jakubiak, T. J. Bunning, R. R. Naik, V. V. Tsukruk, Plasma Enhanced Co-Polymerization of Amino Acid and Synthetic Monomers, *Langmuir*, **2012**, *28*, 1833-1845.
- D. D. Kulkarni, S. Kim, A. G. Fedorov, V. V. Tsukruk, Fast Light-Induced Plasmon-Assisted Phase Transformations of Carbon on Metal Nanostructures, *Adv. Funct. Mater.* **2012**, *22*, 2129-2139.
- M. E. McConney, D. Kulkarni, H. Jiang, T. J. Bunning, V. V. Tsukruk, A New Twist on Scanning Thermal Microscopy, *Nano Lett.* **2012**, *12*, 1218-1223.
- O. Shchepelina, M. O. Lisunova, I. Drachuk, V. V. Tsukruk, Morphology and Properties of Microcapsules with Different Core Releases, *Chem. Mater.*, **2012**, *24*, 1245-1254.
- Anderson, D. M.; Gupta, M. K.; Voevodin, A. A.; Hunter, C. N.; Tsukruk, V. V., Fedorov, A. A., Using Amphiphilic Nanostructures to Enable Long-Range Ensemble Coalescence and Surface Rejuvenation in Dropwise Condensation, *ACS Nano*, **2012**, *6*, 3262-3268.
- Drachuk, I.; O. Shchepelina, M. Lisunova, S. Harbaugh, N. Kelley-Loughnane, M. Stone, V. V. Tsukruk, pH-Responsive LbL Nanoshells for Direct Regulation of Cell Activity, *ACS Nano*, **2012**, *6*, 4266-4278.
- R. Suntivich, O. Shchepelina, I. Choi, V. V. Tsukruk, Inkjet-Assisted Layer-by-Layer Printing of Encapsulated Arrays, *ACS Appl. Mater. Interfaces*, **2012**, *4*, 3102-3110.
- R. Kodiyath, T. A. Papadopoulos, J. Wang, Z. A. Combs, H. Li, R. J. C. Brown, J.-L. Brédas, V. V. Tsukruk, Silver-decorated Cylindrical Nanopores: Combining the Third Dimension with Chemical Enhancement for Efficient Trace Chemical Detection with SERS *J. Phys. Chem., C*, **2012**, *116*, 13917-13927.
- M. Lisunova, M. Mahmoud, N. Holland, Z. A. Combs, M. A. El-Sayed, V. V. Tsukruk, The Unusual Fluorescence Intensity Enhancement of Poly(*p*-phenyleneethynylene) Polymer Separated from the Silver Nanocube Surface by H-bonded LbL Shells, *J. Mater. Chem.*, **2012**, *22*, 16745-16753.
- B. Wallet, E. Kharlampieva, K. Campbell-Proszowska, V. Kozlovskaya, S. Malak, J. F. Ankner, D. L. Kaplan, V. V. Tsukruk, Silk Layering as Studied with Neutron Reflectivity, *Langmuir*, **2012**, *28*, 11481-11489.
- C. Ye, I. Drachuk, R. Calabrese, H. Dai, D. L. Kaplan, V. V. Tsukruk, Permeability and Micromechanical Properties of Silk Ionomer Microcapsules, *Langmuir*, **2012**, *28*, 12235-12244.
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- V. V. Tsukruk, J. H. Wendorff "Supramolecular Polymers and Assemblies: Mesomorphism and Beyond", *Trends in Polymer Science*, 3, 82, 1995
- V. V. Tsukruk, T. L. Einloth, H. Van Esbroeck, C. W. Frank "Miscibility and segregated structures in mixed polymer monolayers", *Supramolecular Sciences*, 2, 219, 1995.
- A. Karim, V. V. Tsukruk, J. F. Douglas, S. K. Satija, L. J. Fetters, D. H. Reneker, M. D. Foster "Self-Organization of Polymer Brush Layers in a Poor Solvent", *J. Phys.*, II, 5, 1441-1456, 1995
- V. V. Tsukruk, D. H. Reneker, "Periodic Surface Instabilities in Stressed Polymer Solids", *Phys. Rev.*, B51, 6089, 1995
- V. V. Tsukruk, D. H. Reneker "Surface Morphology of Syndiotactic Polypropylene Single Crystals Observed by Atomic Force Microscopy" *Macromolecules*, 28, 1370, 1995.

PROFESSIONAL SERVICES

Professional Services at National and International Levels

Associate Editor, <i>ACS Applied Materials&Interfaces</i>	2015-present
Member, Editorial Advisory Board, <i>ACS Biomat. Sci.&Eng.</i>	2014-present
Member, Editorial Advisory Board, <i>ACS Applied Materials&Interfaces</i>	2010-present
Member, Editorial Advisory Board, <i>Langmuir</i>	2010-present
Member, Editorial Advisory Board, <i>Adv. Mater. Sci. & Eng.</i>	2009-present
Member, Editorial Advisory Board, <i>Polymer</i>	2005-present
Member, Editorial Advisory Board, <i>Res. Lett. Mater. Sci.</i>	2007-2009
Member, Editorial Advisory Board, <i>Curr. Chem. Biology</i> ,	2006-2009
Member, Editorial Advisory Board, <i>Tribology Int.</i>	1998-2001
Member, National Academy of Sciences Panel on Bionanotechnology	2012
Member, External Advisory Board, C3Nano	2011-present
CTO, co-founder, <i>SEMADyne</i> , Atlanta	2008-present
Member, External Advisory Board, MSE&ChE Department, Kentucky U.	2004-2007
Member of MRS, APS, and ACS Societies	1992-present

Tsukruk co-organized symposia and industrial workshops at ACS National Meetings on various aspects of polymeric materials and their characterization: *SPM of Polymers* (Orlando, 1996); *Microtribology of Polymers* (Boston, 1998); *SPM industrial workshop* (New Orleans, 1999); *SPM of Polymers* (Washington DC, 2000); and *Highly Branched Polymers* (Atlanta, 2006) in addition to participation (advisory board or co-organizer) in organizing several international conferences (Italy, 2008; Nice, 2012; MRS National Meeting, Boston, 2012). Each of these symposia attracted numerous presenters with three of them resulted in proceeding volumes (ACS Proceedings and Wiley).

About 30 proposals reviewed and 2-4 review panels annually (NSF, DOD, EC, DOE, PRF and several international funding agencies in S. Korea, Saudi Arabia, Israel, and EU)

About 50 papers reviewed annually for more than 20+ journals (*Nature*, *PRL*, *APL*, *Adv Mater*, *Nanolett*, and others)

Co-chair, Symposium at MRS National Meeting on Plasmonic Structures, Fall 2012

Co-chair, Symposium at ACS National Meeting on Highly Branched Polymers, Spring 2006

HONORS, AWARDS, and SERVICES

2014 **Fellow, American Chemical Society**
 2012 SAIC Advisor Award
 2011 **Fellow, Materials Research Society**
 2011 SAIC Advisor Award
 2010 **Humboldt Lecturer** at Humboldt Museum opening ceremony
 2009 **Fellow, American Physical Society**
 2009 SAIC Advisor Award
 2009 **Humboldt Research Award**
 2006 **NSF Special Creativity Award**
 2001 Iowa State Materials Science and Engineering Research Award, elected by faculty



Ceremony with ACS President



Ceremony with MRS President

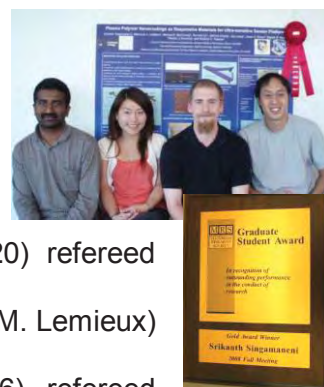
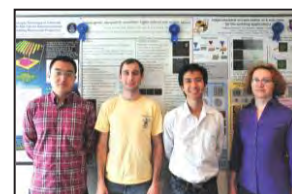


Humboldt Lecturer with Humboldt General Secretary

- 1995 AFOSR Summer Faculty Research Fellowship for work on polymers at Air Force Research Lab
- 1995 Western Michigan, Outstanding Teaching Award, elected by students
- 1994 Visiting Scholarship to work on block copolymers at Nihon University, Tokyo, Japan
- 1994 NSF Research Initiation Award for Young Investigators, an earlier version of CAREER Award
- 1994 NSF Research Opportunity Award to do summer research on polyglutamates at Stanford
- 1990 Humboldt Fellowship to do post-doctoral research on polymeric liquid crystals in Germany
- 1985 Award for the best research on polymeric liquid crystals among young investigators of Ukraine (10 national awards made annually in all science and engineering fields)
- 1983 Award for the best research on polymer composites at the Institute of Macromolecular Chemistry, Ukraine (single annual award to one of 300 researchers)
- 1982 Award for the young investigators for research on polymer blends at the Institute of Macromolecular Chemistry (single award given annually to one of a group of over 80)

Recent Awards for Graduate and Postdoctoral Scholars Advised

- 2014 COPE scholarship to K. Hu for bioelectronics research
- 2014 Award to K. Hu for Best Poster at GT Polymer Network Student Competition
- 2014 Awards to K. Hu and J. Geldmeir for Best Posters at MSE Poster Student Competition
- 2014 Award to K. Hu for Invited Talk at Michigan Macro Symposium
- 2014 National Research Council post-doctoral Fellowship to I. Drachuk to work at AFRL
- 2014 Award to I. Drachuk for 10th Excellence in Graduate Polymer Research Symposium, ACS Meeting
- 2013 Three MSE best poster awards to I. Drachuk, K. Hu, R. Geryak, and R. Suntivich
- 2013 IC Post-doctoral Fellowship to M. Gupta for biomimetic research at Princeton
- 2012 SAIC Best Paper Award (to I. Drachuk) for research on cell protection
- 2011 SAIC Best Paper Award (to D. Kulkarni) for research on graphene
- 2010 Georgia Tech MSE Department Research Initiation Awards (I. Choi, M. Gupta, D. Kulkarni) for first refereed publication on hybrid nanomaterials in first 18 month of graduate study
- 2010 National Defense Science and Engineering Graduate Fellowship (to Z. Combs) to work on Raman active materials
- 2009 MSE Corcia Fellowship to Maneesh Gupta
- 2009 National Research Council post-doctoral Fellowship (to M. McConney) to continue research on responsive polymer layers at AFRL
- 2009 SAIC Best Paper Award (to M. Gupta) for research on silk nanomaterials
- 2009 National Defense Science and Engineering Graduate Fellowship (to K. Anderson) to work on responsive materials
- 2008 **MRS Gold Award for Graduate Research** (to S. Singamaneni) for the best graduate research on buckling of polymer microstructures, the highest student honor at MRS
- 2007 **MRS Best Poster Award**, (to S. Singamaneni, M. McConney, Y.H. Lin, S. H. Chang) for research on plasma polymerized bio-materials
- 2007 Central Intelligence Agency Post-doctoral Fellowship (to M. Lemieux) to continue his work on directed assembly at Stanford
- 2007 Iowa State Zaffarano Prize (to S. Peleshanko) for the most (20) refereed publications in in PhD studies, a single award annually
- 2006 Iowa State All-University Graduate Research Excellence Award (to M. Lemieux) for outstanding research on polymer-silicon structures
- 2006 Iowa State Zaffarano Prize to (K. Genson) for the most (16) refereed



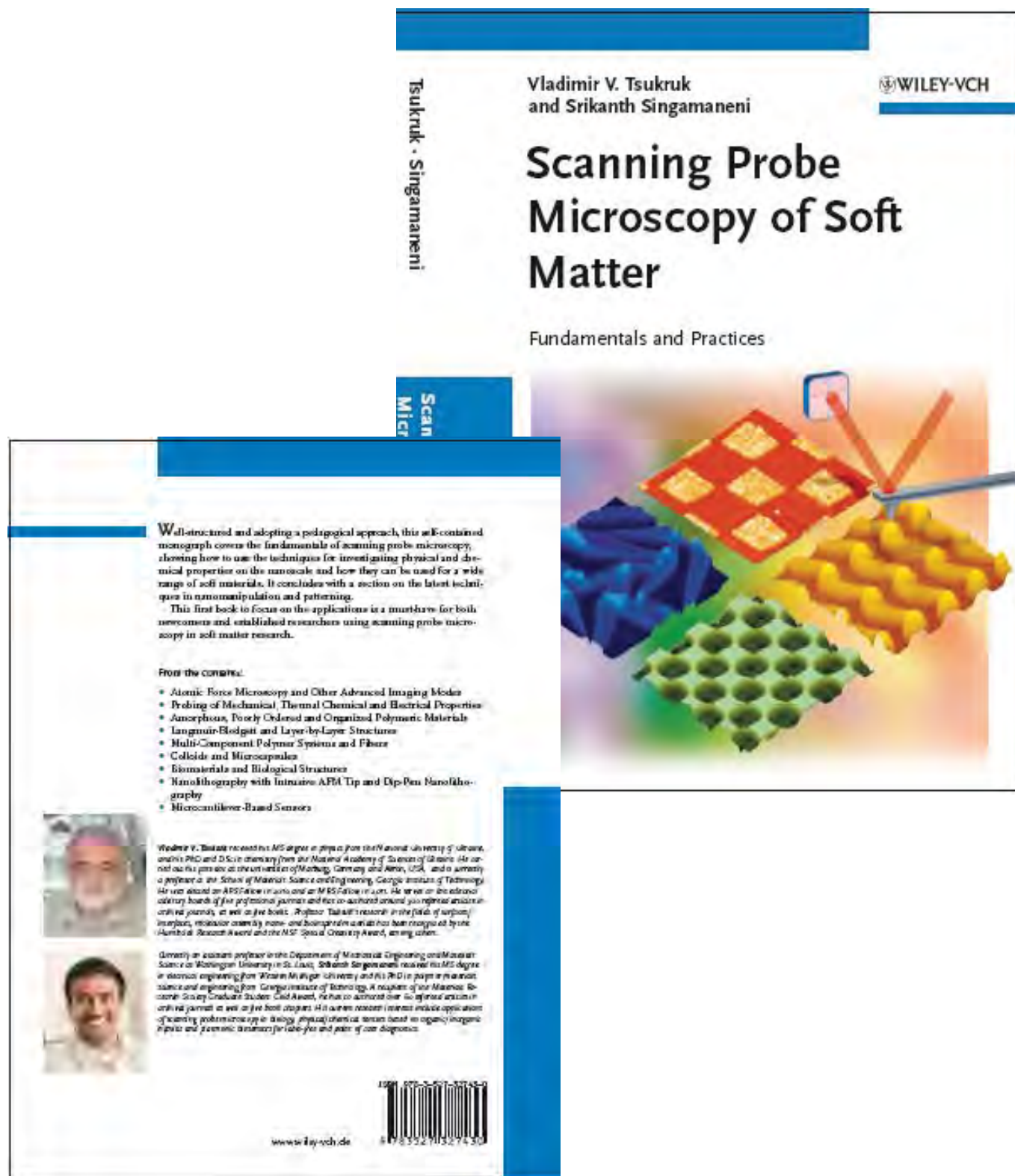
2006 publications in the course of PhD studies, a single award annually
National Research Council post-doctoral Fellowship (to K. Genson) to continue research on grafted polymer layers at NIST

Science popularization: in 2001-2015, *around 50 highlights* on TV, radio, and professional magazines (*Discovery Channel, NPR, Science, MRS Bull., C&E News*) on Tsukruk's results have appeared and 22 images were chosen by 12 different journals for their cover stories.

Appendix 1: Recent journal and book covers



Appendix 2: Recent (2012) textbook



"Well-structured and adopting a pedagogical approach, this self-contained monograph covers the fundamentals of scanning probe microscopy, showing how to use the techniques for investigating physical and chemical properties on the nanoscale and how they can be used for a wide range of soft materials. This first book to focus on the applications is a must-have for both newcomers and established researchers in soft matter"

Independent Review from Amazon.com